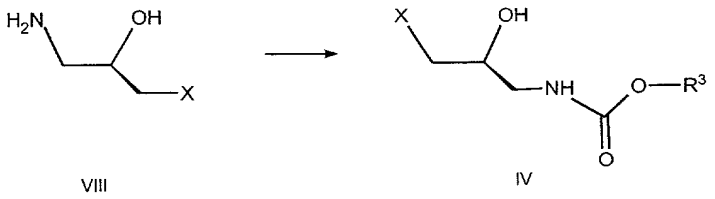
S)-oxazolidinone alkylcarbamoyl intermediate of structural formula (III), an (S)-secondary alcohol of structural formula (IV), and an (S)-ester/protected alcohol of structural formula (V), or a salt or hydrate thereof or acceptable salts, hydrates, or pro-compounds thereof, wherein R^1 is optionally substituted aryl; R^2 is selected from the group consisting of C_1-C_{20} alkyl, C_3-C_7 cycloalkyl, aryl optionally substituted with one or two C_1-C_3 alkyl or halogen groups, allyl, 3-methylallyl, 3,3-dimethylallyl, vinyl, styrylmethyl, benzyl optionally substituted on the aryl with one or two Cl, C_1-C_4 alkyl, nitro, cyano, or trifluoromethyl groups, 9-fluorenylmethyl, trichloromethylmethyl, 2-trimethylsilylethyl, phenylethyl, 1-adamantyl, diphenylmethyl, 1,1-dimethylpropargyl, 2-furanylmethyl, isobornyl, and hydrogen; R^3 is C_1-C_{10} alkyl; R^4 is H or C_1-C_5 alkylcarbonyl; and X is halogen, alkylsulfonyl, or arylsulfonyl.

Another aspect of the present invention is to provide an (S)-epoxide of structural formula (II), an (S)-oxazolidinone t-butylcarbamoyl intermediate of structural formula (III), an (S)-secondary alcohol of structural formula (IV), and an

(S)-ester/protected alcohol of structural formula (V), or acceptable salts, hydrates, or pro-compounds thereof, in crystalline form, and a process of preparing these compounds in crystalline form.

One other aspect of the present invention, as shown in Scheme 4, is to

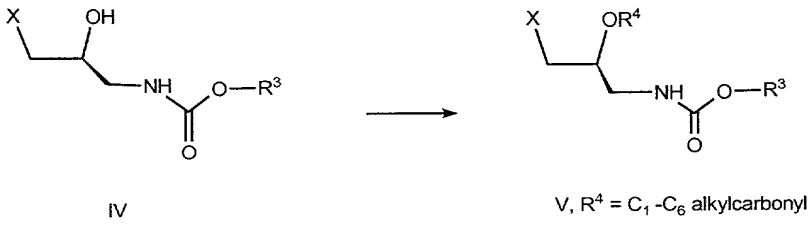
Scheme 4.



provide a process for the preparation of an (S)-3-carbon carbamoyl alcohol of the structural formula (IV) which comprises (a) contacting a dialkyldicarbonate with an (S)-amino alcohol of formula (VIII) in the presence of a base, such as a tri(alkyl)amine. The (S)-3-carbon carbamoyl alcohol can be isolated in crystalline form after recrystallization.

Yet another aspect of the present invention, as shown in Scheme 5,

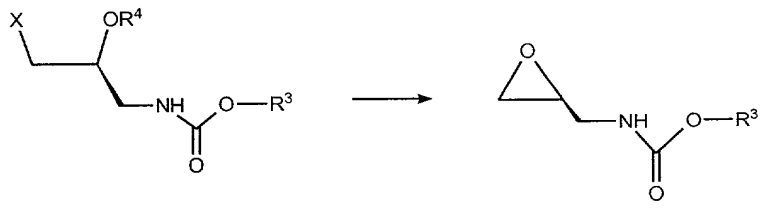
Scheme 5



is to provide a process for preparing a secondary protected-alcohol of structural formula (V) which comprises contacting an (S)-3-carbon amino alcohol of structural formula (IV) with an acylating agent and a base, such as a tri(alkyl)amine. The (S)-secondary protected-alcohol can be isolated in crystalline form after recrystallization.

Yet another aspect of the present invention, as shown in Scheme 6,

Scheme 6



IV, R^4 = H
V, R^4 = C_1-C_6 alkylcarbonyl

II

is to provide a process for the preparation of a (S)-epoxide of structural formula (II) which comprises contacting an (S)-3-carbon amino alcohol of structural formula (IV) or (S)-secondary protected-alcohol of structural formula (V) with a base. The (S)-epoxide can be isolated in crystalline form after chromatography.

Another aspect of the present invention is to provide a process for the production of an (S)-oxazolidinone of structural formula (III) which comprises contacting a carbamate of structural formula (I) with an oxygenated amino reagent selected from the group consisting of an (S)-t-butylcarbamyl secondary alcohol of structural formula (IV), an (S)-t-butylcarbamyl epoxide of structural formula (II), or an (S)-t-butylcarbamyl ester of structural formula (V), in the presence of a lithium cation and a base whose conjugate acid has a pKa greater than about 8.

An additional aspect of the present invention, as shown in Scheme 7, is